

Notice of Allowability

Application No.

09/981,996

Examiner

Matthew J. Sked

Applicant(s)

MIYAZAWA, YASUNAGA

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/03/05.
2. ☒ The allowed claim(s) is/are 1-42.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 11/03/05, with respect to claims 1-42 have been fully considered and are persuasive. The rejection of claims 1-42 has been withdrawn.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gang Luo on 01/09/06.

The application has been amended as follows:

Replace the title of the Application with –A speech recognition method, program and apparatus using multiple acoustic models--.

Allowable Subject Matter

3. Claims 1-42 are allowed.

4. The following is an examiner's statement of reasons for allowance: Claims 1, 6, 9, 12, 17, 20, 23, 28 and 31, while all different in scope, teach a speech recognition method comprising: creating speech data with different types of noise superimposed, eliminating the superimposed noise by using a predetermined

noise elimination method, creating acoustic models corresponding to a plurality of SNRs for each of the noise types, storing these acoustic models, when performing speech recognition: determining the type of noise superimposed on the speech, selecting a corresponding model from the acoustic models corresponding to the determined noise type, eliminating the noise by the predetermined noise elimination method and performing speech recognition on the noise eliminated speech using the selected acoustic model.

Wakisaka teaches a speech recognition system comprising:

creating speech data on which different types of noise have been superposed (voice contains noise, col. 13, lines 1-3);

creating and storing acoustic models according to each of the noise types (creates multiple acoustic models under different noise environments, col. 14, lines 35-39);

during speech recognition: determining the type of noise superposed on speech data to be recognized (recognizes the type of noise, col. 13, lines 41-45);

selecting the corresponding acoustic model corresponding to the determined noise type (determined noise environment is used to search for an acoustic mode for voice recognition hence selecting a model, col. 13, lines 41-48);

eliminating the noise using a predetermined noise elimination method in the training and speech recognition processes (noise deletion unit, col. 13, lines 29-34); and

perform speech recognition based on the selected model (acoustic collating unit collates the input voiced with an acoustic model and produces a recognition result, col. 13, line 63 to col. 14, line 3).

Wymore teaches acoustic models corresponding to a plurality of S/N ratios (col. 4, lines 18-27). Specifically Wymore teaches different noise levels which implies the noise levels having different SNRs.

None of the prior art on record teaches or suggests creating acoustic models corresponding to each of a plurality of SNRs for each of the noise types. It would not have been obvious to one of ordinary skill in the art at the time of invention to modify the systems of Wakisaka and Wymore to arrive at the Applicant's invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS
01/09/06


SUSAN MCFADDEN
PRIMARY EXAMINER